

07/12/00



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**STATEMENT CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) & 1.27(b))--INDEPENDENT INVENTOR**

Docket Number (Optional)

Applicant, Patentee, or Identifier:

Wayne Harrison Robinson

Application or Patent No.:

Filed or Issued:

7/12/2000

Title:

Kenny Clamp

As a below named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☐ the specification filed herewith with title as listed above.  
☒ the application identified above.  
☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern, or organization exists.  
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Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

Wayne Harrison Robinson  
NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR

Wayne Harrison Robinson  
Signature of inventor

Signature of inventor

Signature of inventor

Date

7/12/2000

Date

Date

[illegible]

Applicant believes that there was error in that Claim 1 defined his invention too narrowly. Subsequently new Claim 7 and dependent Claims 8-14 have been added to broaden the scope of the invention. Basis for these Claims can be found in Fig.2 and page 3 of the specification under Detailed Description of the Invention.

The Reissue oath fully complies with C.F.R. 1.63.

Respectfully Submitted;

Wayne Robinson, Applicant

By: Robert Halper- Reg.No. 30,536

Attorney for Applicant

**THE**

### Field of Invention

This invention pertains to a clamp, described as a "Kenny Clamp" whose function it is to bond the grounding electrode conductor to the enclosure of an electric service box, an auxiliary gutter or other related service equipment in accordance with the requirements of the 1996 National Electric Code and is particularly useful in household wiring.

## Background of the Invention

Typically the grounding electrode conductor is fastened to a water pipe or made electrode and extends through an outlet in a service box where it is fastened to a bus bar with a screw.

Exemplary pf prior art ground connectors are as follows:

U.S. Pat. 2,710,381 teaches a device for bonding an electric ground wire to an electric outlet or switch box. This apparatus employs a grounding coupling or wedge wherein the electric wire to be connected to the box is placed in a groove and a stud screwed down upon it. A pin having contact with the ground wire also makes contact with the electric outlet box.

U.S. Pat. 3,009,128 teaches a coupling nut provided with a terminal connector for use in grounding equipment(not specified). The problem that was solved encompassed making the coupling nuts accessible. Heretofore the coupling nut was attached to the terminal in such a way that after it was in place, the terminal connector was inaccessible or very difficult to access. In the invention the coupling nut is cylindrical, has internal threads for threading to a conduit that projects into a service box. A terminal is mounted outside the fitting and has an opening through which a ground wire from equipment within the box can enter either way, and then a set screw is placed down on the wire either radially or axially.

U.S. Pat. 3,567,843 teaches an electric connector for attaching a waterproof jacketed armored cable to a junction box. The cable is rigidly gripped by the connector, which comprises a resilient grommet surrounding the jacket which is compressed between two threaded members. Stirrups straddle the inner and outer surfaces of the grommet at one end and contact both an exposed metal part of the cable and the connector to provide electric grounding. The connector is also provided with a section extending from the gripping surfaces to thread into the junction box.

U.S. Pat. 4,496,791 shows a spring biased connector for electrically bonding a device to a supporting wall. A flanged bushing is threaded into a push button housing mounted on a metal wall. A serrated spring is located between the flange of the bushing and the metal wall so that when the threaded fastener engages the bushing the spring is deflected into the wall and completes an electric circuit. This type of arrangement obviates use of a ground connection wire.

U.S. Pat. 5,181,860 teaches a plug and receptacle connector that is to be used on the control box of a machine tool, etc. An earth lug when mounted in an insulator causes a spring piece of the lug to pierce into a chromate film on a galvanized layer of a receptacle shell resulting in conductivity.

As can be seen there are a number of ways of making ground connections; however, none of the above cited grounded connections would satisfy the 1996 National Electrical Code, (hereinafter referred to as Code) which stipulates that a grounding electrode conductor entering a panel board, must be bonded to a metallic surface and must be connected to a grounding electrode, for example a metal water pipe or a metal rod driven into earth..None of the devices mentioned in the above cited patents show such an arrangement. U. S. 2,710,381 bonds an electric ground wire to a metallic box but shows no connection to a grounding electrode. Similarly U.S. Pat. 3,567,843 shows electrical grounding of metal surface of a cable to an electrical junction box. In 4,496,791 there are features such as the spring jumper that might be likened to a grounding electrode conductor and the conductive wall might be a grounding electrode; however there is an additional element such as the push button considered to be a grounding conductor. Additionally the conductive wall would not satisfy the code as a ground electrode. As defined in the Code, "Grounding Conductor" is a conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes, that is the push button, mentioned above is the grounding conductor.. The "Grounding Electrode Conductor" is the conductor used to connect the grounding electrode to the equipment grounding conductor, to the grounded conductor or to both. The grounding electrode conductor as defined herein provides a low impedance path for service equipment and conductors during fault conditions, short circuits or ground faults. Under normal conditions electricity seeks to return to its source and complete a continuous circuit. This return path is often provided by white neutral wires that return current to the main service panel. A grounding electrode conductor provides an additional return path for electrical current. The ground electrode conductor is a safety feature. As stated above, it is designed to conduct electricity to its source, if current seeks to return to the service panel along a path other than the neutral wire.

Even if the ground wires of the aforesaid patents were to be considered to be grounding electrode conductors they would not satisfy the Code. The fact is that none of the grounding wires is designed to handle an excessive amount of fault current, for example in excess of 10,000 amperes in domestic households, for an extended period of time. This is significant for the reason that if there should be a failure in the circuit and an excessive amount of current is dumped onto this wire, it would be unable to control the situation.

Accordingly it is an object of this invention to provide a grounding electrode conductor to be connected to a panel board that conforms to the 1996 National Electrical Code.

It is another object of this invention to use a grounding electrode conductor that is rated for the available fault current.

It is also another object of this invention to facilitate the securement of the grounding electrode conductor to the panel board by use of a simple clamp.

#### Brief Description of the Drawing

Fig. 1 is a front section showing the assembly of a grounding electrode conductor to a

conventional electrical connector in the panel board

Fig. 2 is a front section showing the assembly of the grounding electrode conductor to the improved electrical connector of the invention in the panel board.

Fig. 3 is an enlarged view of the improved connector and a mechanism for fastening of the connector to the conductor.

Fig. 4a is an enlarged view of another embodiment showing another connector.

Fig. 4b is a view showing the connector secured to the panel board.

Fig. 5a is an enlarged view of a third embodiment of a connector.

Fig. 5b is a similar view to Fig. 4b showing the third embodiment secured to the panel board.

#### Detailed description of the Preferred Embodiment

Fig 1 shows the grounding electrode conductor 1 conventionally connected to a water pipe 2, the grounding electrode, and extending to an inlet 3 of a panel board 4. The conventional connector 5 consists of adjacent plates 6a, 6b through which conductor 1 passes. These plates contain spaced threaded perforations 7 through which pass screws 8 to secure the conductor 1 to the plates. One of the plates is welded to a bushing 8a that threads into an opening 9 in the panel board. The conductor 1 terminates in a bus bar 10 where it is secured by screw 11.

Fig. 2 shows the grounding electrode conductor 1 assembled as in Figure 1 except for the improved connector 12. The inlet 13 is now of a size to accommodate a high press cylindrical sleeve 14, which is either 1/2" or 3/4" and is made of copper or aluminum. For a 1/2" sleeve a #8 through #2 bare copper conductor, or a #6 through 1 bare aluminum would be used. For a 3/4 " sleeve, a #1 through 3/0 bare copper/aluminum conductor, or a #1 through bare aluminum would be used. The portion of the sleeve that enters the panel board is threaded and secured [therto] thereto by a lock nut 15. The conductor passes through the sleeve and as in Figure 2 ends in the bus bar 10 within the panel board, where it is secured by the screw 11. .The conductor 1 is clamped in the sleeve by crimping the sleeve as shown at 12a [As shown in] In Figure 3, a long handled plier 16 having arms 16a, wherein one arm has a projecting tooth 17a and the other arm has a corresponding groove 17b. The plier grasps the sleeve at several positions on its outer surface to compress the sleeve around the conductor. A second method shown in Figure 4 involves shaping the sleeve as a funnel 18 wherein the narrow portion of the funnel is slit into two legs 19. which are threaded the length of the funnel. Beyond the funnel there is a cylindrical threaded extension 20 that is fastened to the panel board and secured by a lock nut 21 adjacent the interior of the panel board. A threaded ring 22, having a diameter corresponding to the diameter of the narrow portion of the funnel, is slipped over the legs..As it is turned upward, it compresses the legs around the conductor.A flange 23 on the extension adjacent the exterior surface of the panel board limits the movement of the ring. While this is the preferred device used to clamp the conductor, a slight modification is shown in Figure 5a. The narrow portion of the funnel is divided into four legs.This modification is more appropriate where the grounding electrode conductor is of a larger diameter. In any case whichever device is used, both the

[illegible]

While the invention has been shown and described in terms of specific embodiments, it will be obvious to those skilled in the art that various modifications and changes can be made therein without departing from the scope and spirit of the invention.

[illegible]

a) a grounding electrode having a grounding electrode conductor affixed thereto, said conductor extending from said grounding electrode to an electrical panel board,

c) compression means for clamping and securing said grounding electrode conductor to said metal press sleeve in electrical contact at the region of clamping.

e) said press sleeve and said grounding electrode conductor being rated for available fault current.

3. A grounding electrode conductor wherein said connector and said conductor are made of copper.

5. A grounding electrode conductor as in Claim 1 wherein said sleeve is in the form of a funnel having a lower, bifurcated, narrow end and a wider upper end having a cylindrical extension that threads into said inlet of said panel board, said funnel having a threaded exterior surface said compression means includes a threaded ring having an internal diameter corresponding to that of said bifurcated narrow end, said ring being rotated so as to compress said bifurcated ends of said funnel around said conductor.

6. A grounding electrode conductor as in Claim 5 wherein said lower end of said funnel is divided

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8. A device for bonding a grounding electrode conductor to the enclosure of an electric service box in conformance to the National Elecreic Code comprising

b) said enclosure having an inlet to which a metal press sleeve conector can be affixed, said connector having a top and bottom with an aperture thereat for receiving said conductor, said top of said connector being threaded and secured to said inlet by a lock nut, said conductor having an end that passes through said aperture in said top and being fastened to a bus bar in said enclosure.

d) said sleeve being substantially in the form of a cylinder having a threaded extension that passes through said inlet of said enclosure, said compression means includes a long handled plier having one toothed arm and another arm having a corresponding groove, said plier grasping said sleeve at spaced sections thereof to crimp said sleeve

9. A device as In Claim 8 wherein said connector and said conductor are made from a metal selected from copper and aluminum.

11. wherein said sleeve has a diameter of 1/2" or 3/4" said conductor has a dimension within the range of #8-#2 for a 1/2" sleeve and within the range of #1-3/0 for a 3/4" sleeve.



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[illegible]

In the Drawings

### In the Specification

line 24, "therto" has been changed to --thereto--.

Respectfully Submitted,

**Wayne Robinson, Applicant**

Attorney for Applicant

RH/ah

Ph. 301-572-2089; Fax 301-572-4719

7 ~~51~~<sup>12</sup>2000

FIG. 1

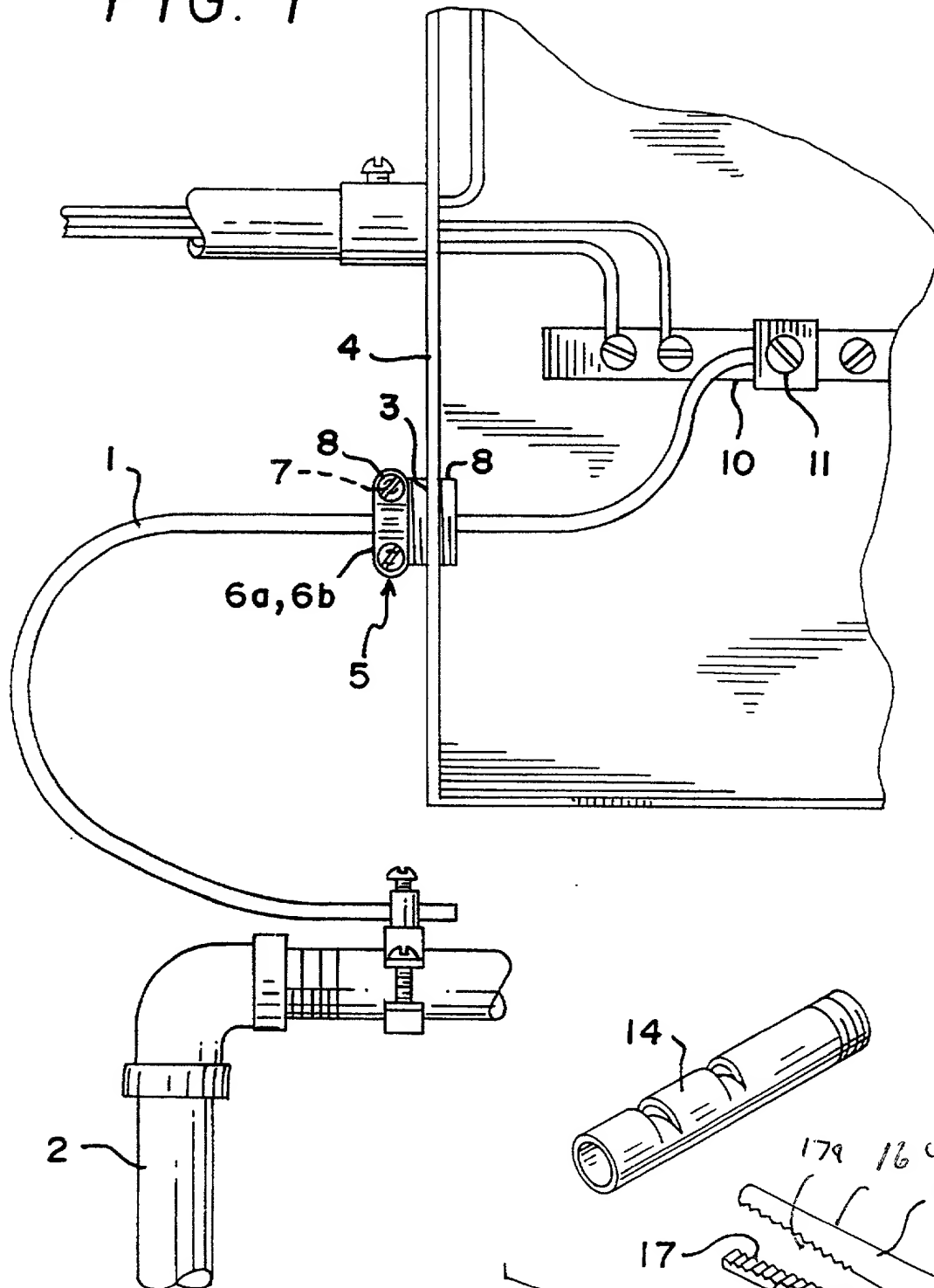
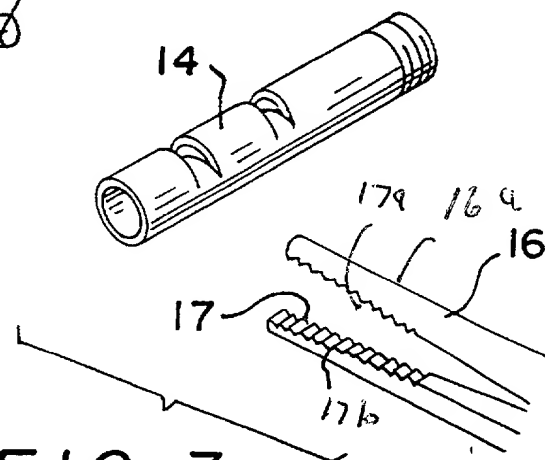


FIG. 3



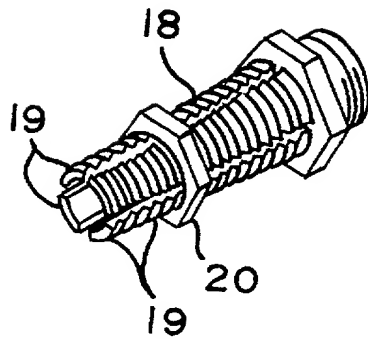


FIG. 5a

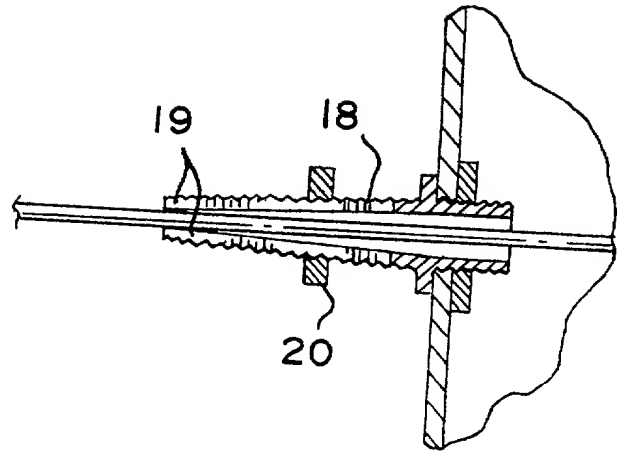


FIG. 5b

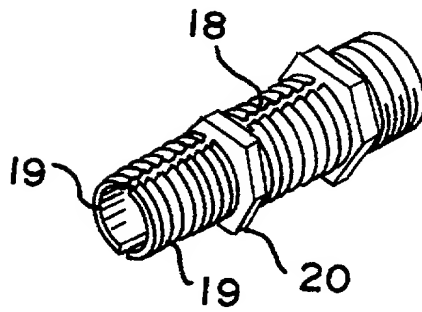


FIG. 4a

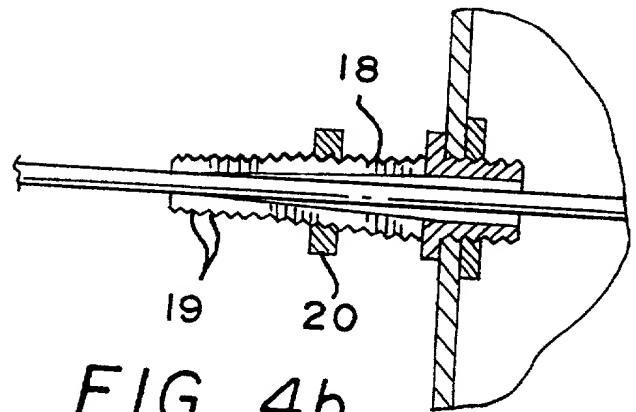


FIG. 4b

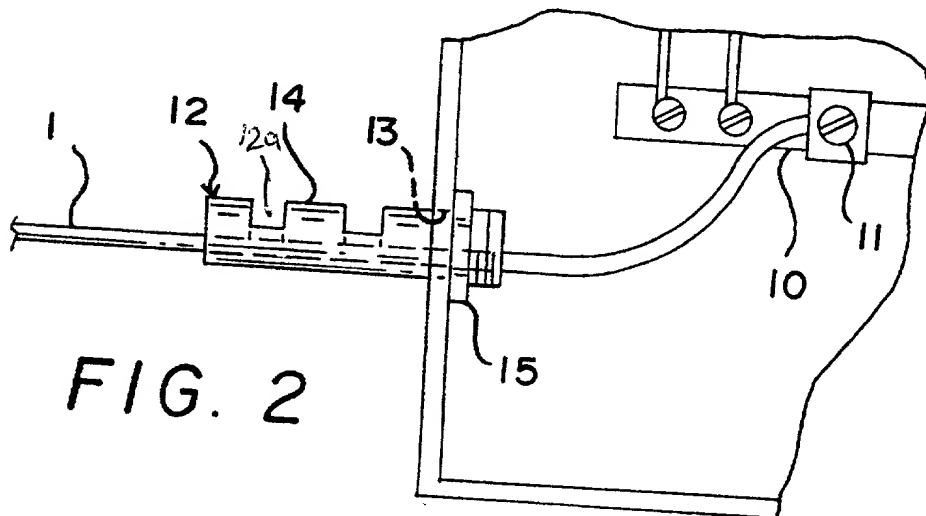


FIG. 2

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**REISSUE**  
**DECLARATION FOR UTILITY OR**  
**DESIGN**  
**PATENT APPLICATION**  
**(37 CFR 1.63)**

☒ Declaration Submitted with Initial Filing  
OR  
☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number

First Named Inventor

Wayne H. Robinson

**COMPLETE IF KNOWN**

Application Number

Filing Date

Group Art Unit

Examiner Name

1

7/12/2000

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Kenny CLAMP

the specification of which

(Title of the invention)

☒ is attached hereto  
OR

☐ was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

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(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
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			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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## DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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Name	Registration Number	Name	Registration Number
Robert Helper	30,536		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

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Name	Robert Helper				
Address	3118 Calverton Blvd				
Address					
City	Beltzville	State	MD	ZIP	20705
Country	USA	Telephone	301-572-2089	Fax	301-572-4719

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

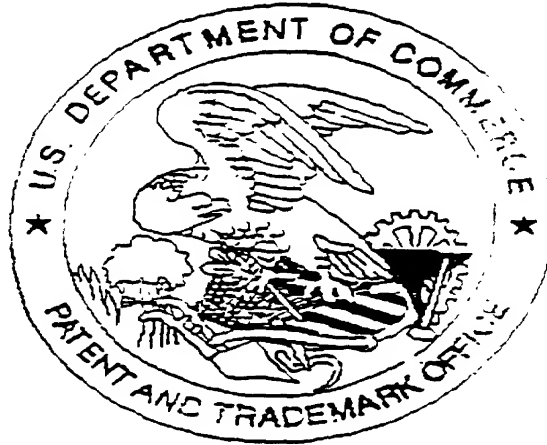
Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))		Family Name or Surname					
Wayne Harrison		Robinson					
Inventor's Signature	Wayne Harrison Robinson		Date	7/12/00			
Residence: City	Lothian	State	MD	Country	Anne Arundel	Citizenship	US
Post Office Address	671 TETON DR						
Post Office Address							
City	Lothian	State	MD	ZIP	20711	Country	USA

☐ Additional inventors are being named on the supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

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